

**Comments on Information Needs Document
TWG Version, September 2002
(final draft, originally presented 12/14/01)**

1. CORRECTION OF MANAGEMENT OBJECTIVE WORDING

MO 2.1 – Maintain or attain humpback chub (>51 to <200 mm) (~~<51 to >200 mm~~) abundance and year-class, strength in the LCR and other aggregations at appropriate target levels for viable populations and to remove jeopardy.

2. PROPOSED NEW INFORMATION NEEDS TO ADDRESS GAPS

These will need to be sequenced in addition to the ten IN's Kurt Dongoske addressed to the Technical Work Group.

RIN 1.2.5 - How does the occurrence of new invasive species (such as New Zealand mudsnail) affect the composition and biomass of benthic invertebrates in the between Glen Canyon Dam and the Paria River?

RIN 1.4.5 - How does the occurrence of new invasive species (such as New Zealand mudsnail) affect the composition and biomass of benthic invertebrates in the Colorado River ecosystem below the Paria River?

RIN 2.1.5 - Determine the timing and quantity of young-of-year humpback chub dispersal from the LCR.

An additional IN gap is identified regarding predators in the reach from Glen Canyon Dam to the Paria River. However, we were uncertain what was intended here and we have to defer back to the TWG for further clarification before any action can be proposed.

3. SUGGESTED REWORDING OF INS WHERE THE CURRENT WORDING LEADS TO A YES/NO ANSWER, OR OTHER CLARIFICATIONS AS REQUESTED BY TWG

RIN 1.3.3 – How do top-down effects on primary producers (grazing and predation) ~~on~~ ~~primary producers~~ affect food base productivity?

RIN 2.1.2 – ~~What are the~~ Quantify sources of mortality for humpback chub <51 mm in rearing habitats in the LCR and mainstem and how are ~~they~~ these sources of mortality related to dam operations.?

- RIN 2.2.2 – ~~Can~~ Develop a population dynamics model ~~be developed~~ to predict viability of native fish under different flow regimes and environmental conditions.?
- RIN 2.2.7 – Determine if implementation and operation of a the TCD and/or steady flows represent a technically feasible, ecologically sustainable, and practical option for establishing mainstem spawning.?
- RIN 2.2.9 – ~~Is~~ What is the appropriate role of humpback chub augmentation ~~a viable and advisable as a~~ management strategy to establish mainstem spawning aggregations.?
- RIN 2.2.10 – What techniques are available to determine natal stream of native fishes in the Colorado River ecosystem?
- RIN 2.2.11 – What are the impacts of current recreational and research activities on mortality, recruitment and the population size of humpback chub?
- RIN 2.3.3 – How does nonnative fish control affect disease/parasite loads?
- RIN 2.5.1 – ~~Is the existing hybridization between~~ Would the re-introduction of razorback suckers into the Colorado River ecosystem compromise the genetic integrity of ~~flannelmouth suckers either species~~ due to hybridization (with flannelmouth suckers)?
- RIN 2.5.2 – How does ~~Is the existing hybridization between~~ razorback suckers and flannelmouth suckers affect ~~a source of concern for~~ the genetic integrity of either species? What are the factors contributing to this ongoing hybridization?
- RIN 4.1.4 – How does ~~Has there been a change in~~ the genetics or “strain” of rainbow trout in the Lees Ferry reach ~~that might account for the decrease in~~ influence the average size of fish creel by anglers?
- RIN 5.1.6 – ~~Does the Vasey’s Paradise~~ What is the range of occurrence of the ambersnail ~~taxon occur outside of~~ found at Vasey’s Paradise?
- RIN 5.2.3 – How can remote sensing technologies be used to less intrusively and more cost effectively characterize and monitor Kanab ambersnail habitat at Vasey’s Paradise (vegetation type and distribution)?
- RIN 6.5.1 – ~~Are~~ Determine if nonnative species are expanding or contracting at a local scale (patch or reach).?
- SIN 7.2.1 – How do the hydrodynamics and stratification of Lake Powell influence the food base or fisheries downstream?

- SIN 8.5.1 – How do sand bar textures influence biological processes? ~~If so, then how?~~
- SIN 8.5.4 – ~~Can~~ What is the role of turbidity and how can it be managed to achieve biological objectives?
- SIN 8.5.5 – How can the ongoing fine sediment supply be managed to achieve sustainable habitats?
- SIN 8.5.9 – How are sandbar textures related to cultural site stability? ~~If so, then how?~~
- SIN 8.5.10 – How are sand bar textures related to recreational site stability? ~~If so, then how?~~
- RIN 8.6.1 – How do ongoing inputs of coarse sediment from tributaries influence storage of fine sediment within pools, runs, and eddies throughout the Colorado River ecosystem?
- RIN 8.6.2 – How do ongoing inputs of coarse-sediment from tributaries alter the distribution of main channel habitats needed by benthic organisms within pools, runs, and eddies throughout the Colorado River ecosystem?
- RIN 9.1.2 – ~~Are the~~ What is the relationship between visitor capacities for recreational activities ~~consistent with NPS management plans? on the river and the Colorado River Management Plan (CRMP)? Are NPS management plans consistent with Colorado River~~ How are ecosystem capacities to absorb visitor impacts being used to revise the CRMP?
- RIN 9.1.3 – How do ongoing inputs of coarse sediment from tributaries diminish or enhance navigability of rapids throughout the Colorado River ecosystem?
- RIN 11.2.4 – ~~If there is a resource change, what are the sources?~~ What changes are occurring in cultural resource sites, and what are the causes of those changes?
- RIN 12.2.7 – How can habitat designation using a GIS application be utilized as an effective method to adjust site-specific population estimates (e.g., mark-recapture or depletion methods) to system-wide extrapolations by using catch-per-unit-effort values that are scaled relative to the proportion of different habitat types available in Glen Canyon?
- RIN 12.7.1 – How effective are the current strategies to achieve tribal consultation ~~effective?~~
- RIN 12.7.2 – How well do these current strategies to achieve tribal consultation meet legal and AMP protocols?
- RIN 12.8.1 – ~~Is~~ How well does current tribal participation in the AMP research and long-term monitoring programs ~~sufficiently meeting~~ meet tribal needs and desires?